

METHOD OF REDUCING A RIPPLE OF A HEAVY LOADING PULSE FREQUENCY MODULATED VOLTAGE REGULATOR

Abstract

In a pulse frequency modulated (PFM) voltage regulator, a PFM switching signal is provided for converting a DC voltage source to an output voltage. The output voltage is detected. When the output voltage is lower than a predetermined target voltage, a duty cycle of the PFM switching signal is reduced. For example, a minimum OFF-time of the PFM switching signal may be prolonged or a constant ON-time of the PFM switching signal may be shortened. In other words, a period of delivering energy to a capacitor from an inductor may be prolonged or a period of storing energy in the inductor may be shortened. Therefore, a ripple of the output voltage is effectively reduced when the PFM voltage regulator is operated in a heavy loading condition.